

## REMARKS

Claims 35 through 45 are now pending in the application. Claims 35 and 41 have been amended hereby. Claims 1 through 34 were previously cancelled without prejudice to the subject matter contained therein. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

### REJECTION OF CLAIMS 35, 36, 41-43, AND 45 UNDER 35 U.S.C. § 102

Claims 35, 36, 41-43, and 45 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Japanese Patent JP 408228910 A (the '910 Patent). This rejection is respectfully traversed.

At the outset, Applicant notes that the amendment of claims 35 and 41 hereby have rendered moot the Section 102 rejections.

Claim 35 has been amended to clarify that end portions of the two-way SMA pin are rigidly secured to the first and hinge leafs respectively to provide for transfer of torque in both clockwise and counterclockwise directions from the two-way SMA pin to one of the hinge leafs relative to the other of said hinge leafs, whereby the piano hinge does not freely pivot but pivots in response to the two-way SMA pin twisting as the temperature of the two-way SMA pin changes between the austenite temperature to the martensite temperature.

Claim 41 has been amended to clarify that the two-way SMA hinge pin comprises a NiTiNol alloy, and that the first and second tabs at opposite end portions of the two-way SMA hinge pin are rigidly secured to the respective first and second hinge leafs such that the piano hinge does not freely pivot and such that torque generated by the two-way SMA hinge pin in either a clockwise or counterclockwise direction is transferred to one of the hinge leafs relative to the other of said hinge leafs, whereby the piano hinge pivots in response to the two-way SMA hinge pin twisting as the temperature of the two-way SMA hinge pin changes between the austenite temperature and the martensite temperature.

The Office Action states in note 1 (page 2) that the two-way SMA causes the hinge apparatus to apply a **closing force** to the device coupled to the hinge apparatus.

To the contrary, the pin 7 in Japanese '910 patent **provides an opening force only**. The '910 patent teaches a cooking pot having a lid 2 that may be pivoted or lifted to place food to be cooked in the cooking pot. The lid 2 is permitted to pivot freely, since the pin 7 is not rigidly secured to the plate 9. The pin 7 has only one end secured to a lid 2, while the other end of pin 7 is not rigidly secured to the plate 9 but merely makes contact with the plate 9. When the food is cooked and the temperature of the pin 7 increases, the ends 7c contacting the plate 9 twist to cause the lid 2 to open. The lid 2 in the '910 patent is closed by virtue of gravity, and the pin 7 is only capable of providing a torque for lifting the lid 2 (not for closing the lid 2). As such, the pin 7 cannot apply a torque in either direction to the lid 2 relative to surface 9. Thus, the '910 patent teaches a pin that permits free pivotal movement without requiring a temperature change in the pin.

Amended claims 35 and 41 clarify that each respective end portion of the pin is rigidly secured to the hinge to provide for torque transfer in either direction from the pin to one of the hinge leafs relative to the other. The claimed hinge does not freely pivot but rather pivots in response to the pin twisting as the temperature of the pin changes between an austenite temperature and a martensite temperature.

Applicant submits that it would not have been obvious to rigidly secure each respective end portion of a pin to each hinge leaf, because doing so would prevent the hinge from freely pivoting and would be counter-intuitive to the purpose of a conventional hinge. The claimed hinge would not have been obvious to one skilled in the art, even in view of the '910 patent, because the claimed hinge does not permit free pivotal movement as taught in the '910 patent, but rather pivots as a result of a change in the pin from an austenite to a martensite temperature. Such a novel hinge may be used to replace a conventional hinge and mechanized actuator in a Satellite application, for example, where gravity cannot be relied on to maintain a door in a closed position as in the '910 patent. Such a novel hinge would eliminate (or least reduce) the need for mechanized actuator to pivot the hinged door or item.

Furthermore, amended claim 41 clarifies that the two-way SMA hinge pin is made of a NiTiInol alloy, and that the two-way SMA hinge pin at least partially twists when the two-way SMA hinge pin changes between an austenite temperature and a

martensite temperature of the NiTiInol alloy. The '910 patent does not disclose, teach or suggest the use of a NiTiInol alloy. Accordingly, Applicant submits that claim 41 is further allowable for at least these additional reasons as well.

With regard to dependent claims 36-40 and 42-45, these claims each depend from independent claim 35 or 41, which Applicant believes to be allowable in view of the above remarks. Accordingly, Applicant respectfully submits that claims 36-40 and 42-45 are also in condition for allowance for at least the reasons given above.

#### **REJECTION OF CLAIMS 37-40 AND 44 UNDER 35 U.S.C. § 103**

Claims 37-40 and 44 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Japanese Patent JP 408228910 A. This rejection is respectfully traversed.

Claims 37-40 and 44 each depend from independent claim 35 or 41, which Applicant believes to be allowable in view of the above remarks. Accordingly, Applicant respectfully submits that claims 37-40 and 44 are also in condition for allowance for at least the reasons given above.

#### **CONCLUSION**

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is now in a condition for allowance.

Applicant believes that he does not owe any fee in connection with this filing. If, however, Applicant does owe any such fee(s), the Commissioner is hereby authorized to charge the fee(s) to Deposit Account No. **08-0750**. In addition, if there is ever any other fee deficiency or overpayment under 37 C.F.R. §1.16 or 1.17 in connection with this patent application, the Commissioner is hereby authorized to charge such deficiency or overpayment to Deposit Account No. **08-0750**.

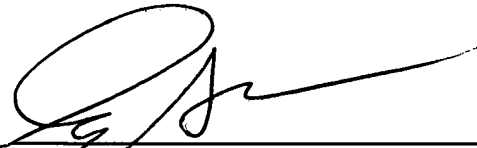
Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite

prosecution of this application, the Examiner is invited to telephone the undersigned directly at (314) 726-7502.

Respectfully submitted,

Dated: September 6, 2005

By:

  
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